

Claims

What is claimed is:

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1. A method of storing a flattened structured data document, comprising the steps of:

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a) receiving the flattened structured data document having a plurality of lines, each of the lines having a tag, a data entry and a format character;

b) storing the tag in a dictionary store;

c) storing the data entry in a dictionary store; and

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d) storing the format character, a tag dictionary offset and a data dictionary offset in a map store.

2. The method of claim 1, wherein step (b) further includes the steps of:

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b1) transforming the tag to form a tag transform;

b2) storing the tag dictionary offset in a dictionary index at an address pointed to by the tag transform.

3. The method of claim 1, wherein step (c) further includes the steps of:

c1) transforming the data entry to form a data transform;

5 c2) storing the data dictionary offset in a dictionary index at an address pointed to by the data transform.

4. The method of claim 2, wherein step (b1) further includes the steps of:

10 i) determining if the tag is unique;

ii) when the tag is unique, storing the tag in the dictionary store;

15 iii) when the tag is not unique, the tag is not stored in the dictionary store.

5. The method of claim 4, wherein step (i) further includes the steps of:

20 determining if a tag pointer is stored in the dictionary index at an address equal to the tag transform;

when the tag pointer is stored in the dictionary index, the tag is not unique.

6. The method of claim 5, further including the step of:

when the tag pointer is not stored in the
associative index, the tag is unique.

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7. The method of claim 1, wherein step (a) further including
the step of:

a1) wherein each of the lines have a plurality of tags.

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8. The method of claim 1 further including the steps of:

e) creating a map index;

f) determining if the tag is unique;

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g) when the tag is unique, storing a pointer to a map location of
the tag.

9. The method of claim 8, further including the steps of:

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h) when the tag is not unique, determining if a duplicates flag
is set;

i) when the duplicates flag is set, incrementing a duplicates
count.

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10. The method of claim 9, further including the steps of:

- j) when the duplicates flag is not set, setting the duplicates flag;
- k) setting the duplicates count to two.

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11. The method of claim 10, further including the steps of:

l) calculating a transform of the tag with an instance count to form a first instance tag transform and a second instance tag transform;

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m) storing a first map pointer in the map index at an address associated with the first instance tag transform.

12. The method of claim 11, further including the step of:

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n) storing a second map pointer in the map index at an address associated with the second instance tag transform.

13. The method of claim 9, further including the steps of:

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j) calculating a transform of the tag with an instance count equal to the duplicates count to form a next instance tag transform;

k) storing a next map pointer in the map index at an address associated with the next instance tag transform.

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14. The method of claim 1 further including the steps of:

e) creating a map index;

f) determining if the data entry is unique;

5 g) when the data entry is unique, storing a pointer to a map location of the tag.

10 15. A system for storing a structured data document, comprising:

a map store having a plurality of cells each containing a dictionary pointer and a format character;

15 a dictionary store having a plurality of tags and a plurality of data entries; and

an associative index having a plurality of addresses each of the plurality of address having an entry flag.

20 16. The system of claim 15, further including a flattener that converts the structured data document into a flattened structured data document, the flattener connected to the map store.

25 17. The system of claim 16, further including a parser parsing the flattened structured data document for a tag and a data entry.

18. The system of claim 17, further including a transform generator connected to the parser, the transform generator converting the data entry into a tag transform.

5 19. The system of claim 15, further including a map index that contains a dictionary pointer.

20. The system of claim 15, wherein the format character is a delete number.

10 21. The system of claim 15, wherein some of the plurality of addresses are associated with a tag transform.

15 22. The system of claim 15, wherein some of the plurality of addresses are associated with a data transform.

23. The system of claim 15, further including a plurality of format characters.

20 24. The system of claim 23, wherein one of the plurality of format characters indicates a first new tag in a flattened line.

25 25. The system of claim 23, wherein one of the plurality of format characters indicates a number of consecutive tags closed after a data entry.

0976797-012304

26. The system of claim 23, wherein one of the plurality of format characters indicates a parent line number of a flattened line.

27. The system of claim 23, wherein one of the plurality of format characters indicates an inserted a flattened line.

28. The system of claim 15, wherein the dictionary store includes a data dictionary store and a tag dictionary store.

29. A method of storing a flattened structured data document, comprising the steps of:

- a) flattening the structured data document to form a flattened structured data document;
- b) parsing each line of the flattened structured data document for a tag;
- c) determining if the tag is unique;
- d) when the tag is unique, storing the tag in a dictionary store.

30. The method of claim 29, further including the steps of:

- e) storing a tag dictionary offset in a map store;
- f) storing a plurality of format characters in the map store.

31. The method of claim 29, further including the steps of:

e) when the tag is not unique, determining a tag dictionary offset;

5 f) storing the tag dictionary offset in a map store.

32. The method of claim 29, wherein step (d) further includes the steps of:

10 d1) transforming the tag to form a tag transform;

d2) performing an associative lookup in a dictionary index using the tag transform.

33. The method of claim 32, further including the steps of:

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d3) creating a map index that has a map pointer that points to a location in the map store of the tag, wherein the map pointer is stored at an address of the map index that is associated with the tag transform.

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